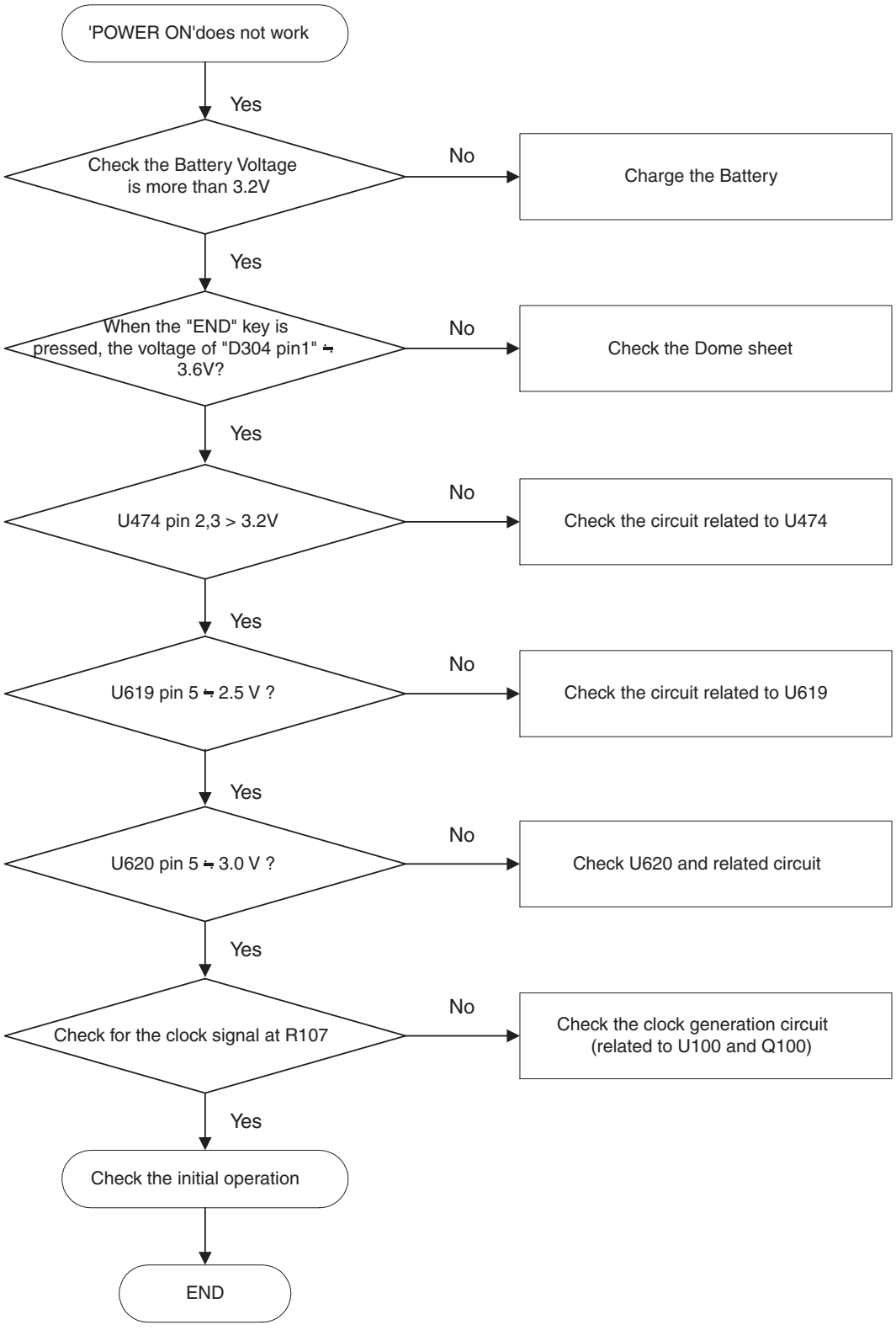
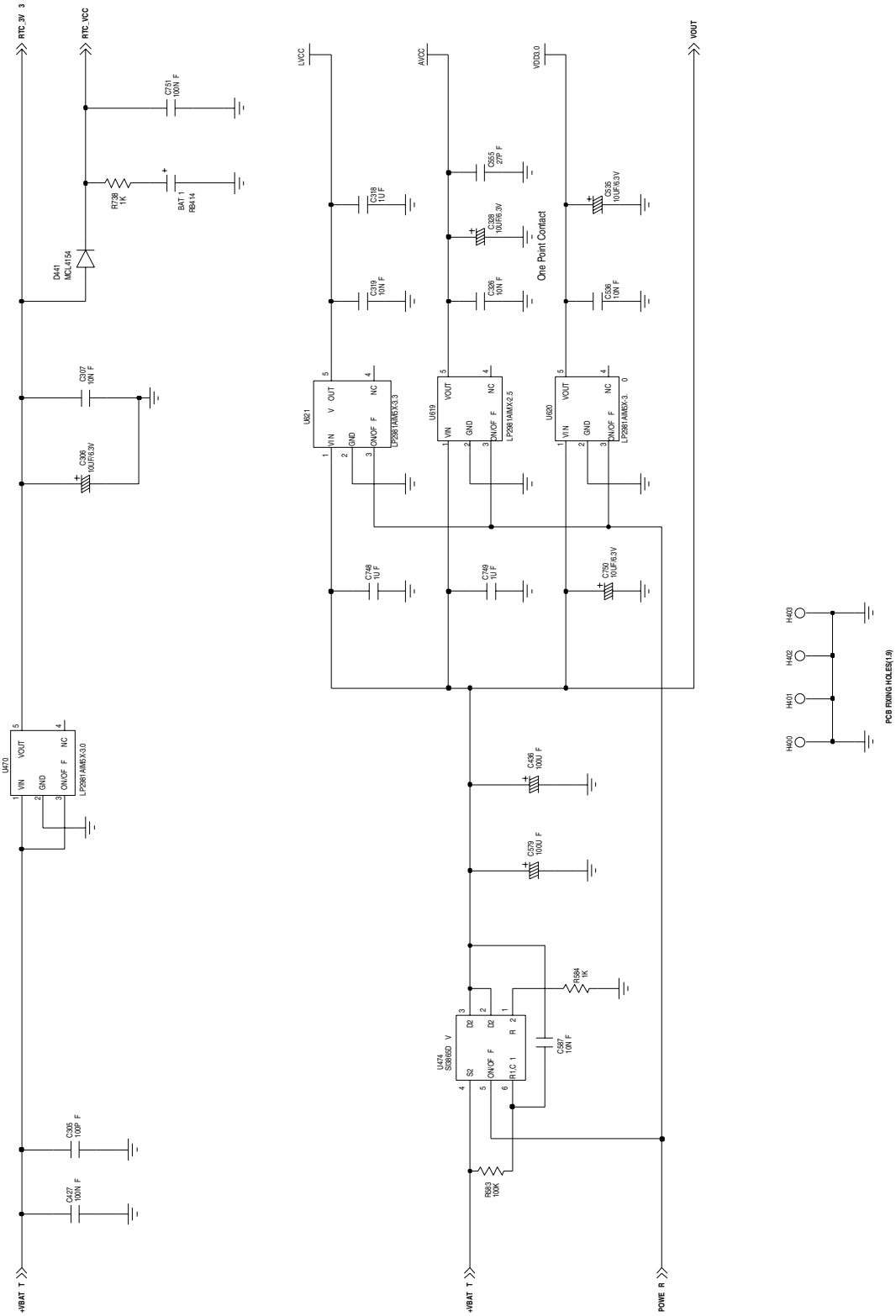
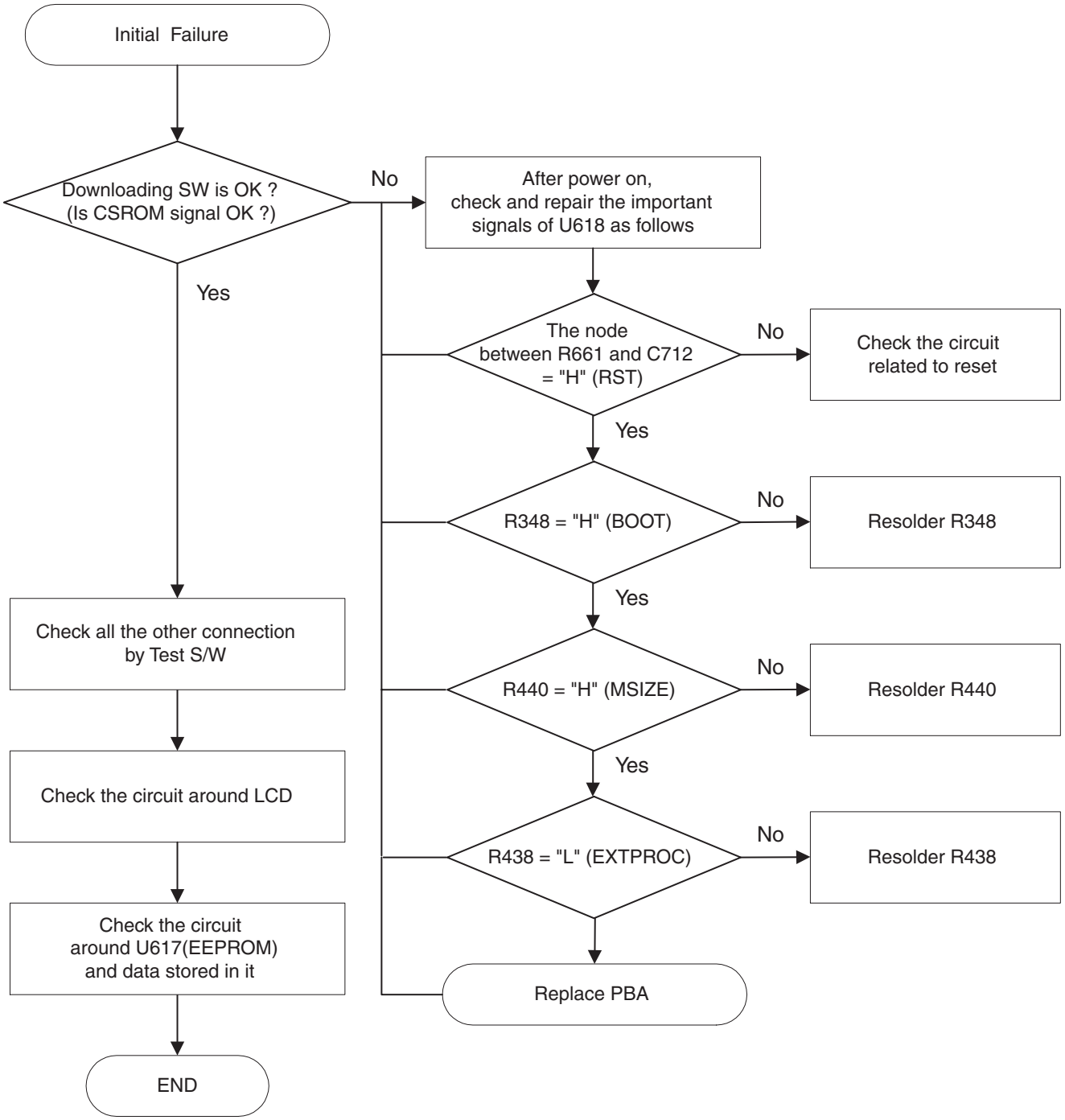
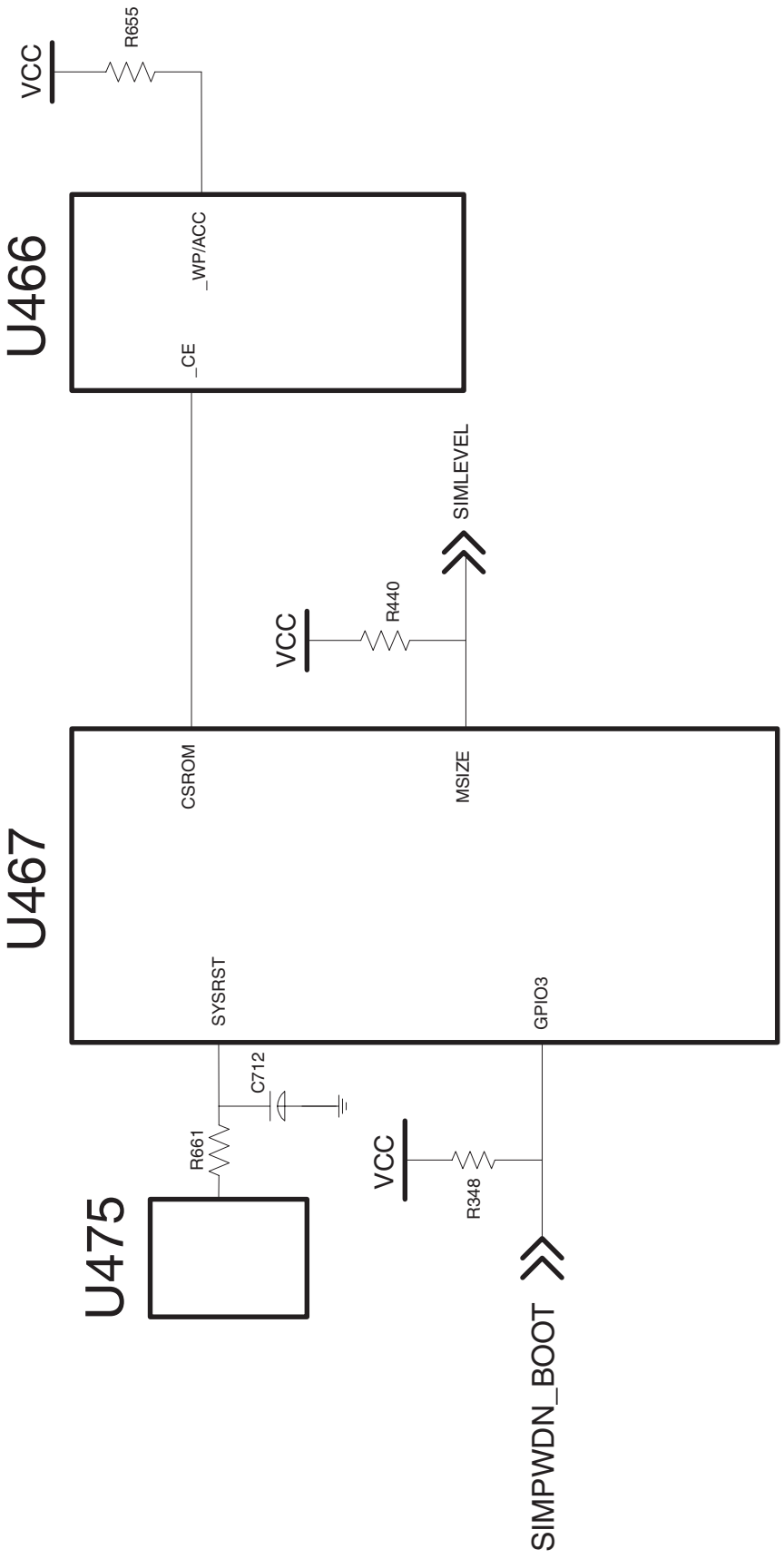
5. Flow Chart of Troubleshooting and Circuit Diagrams

5-1 Power ON

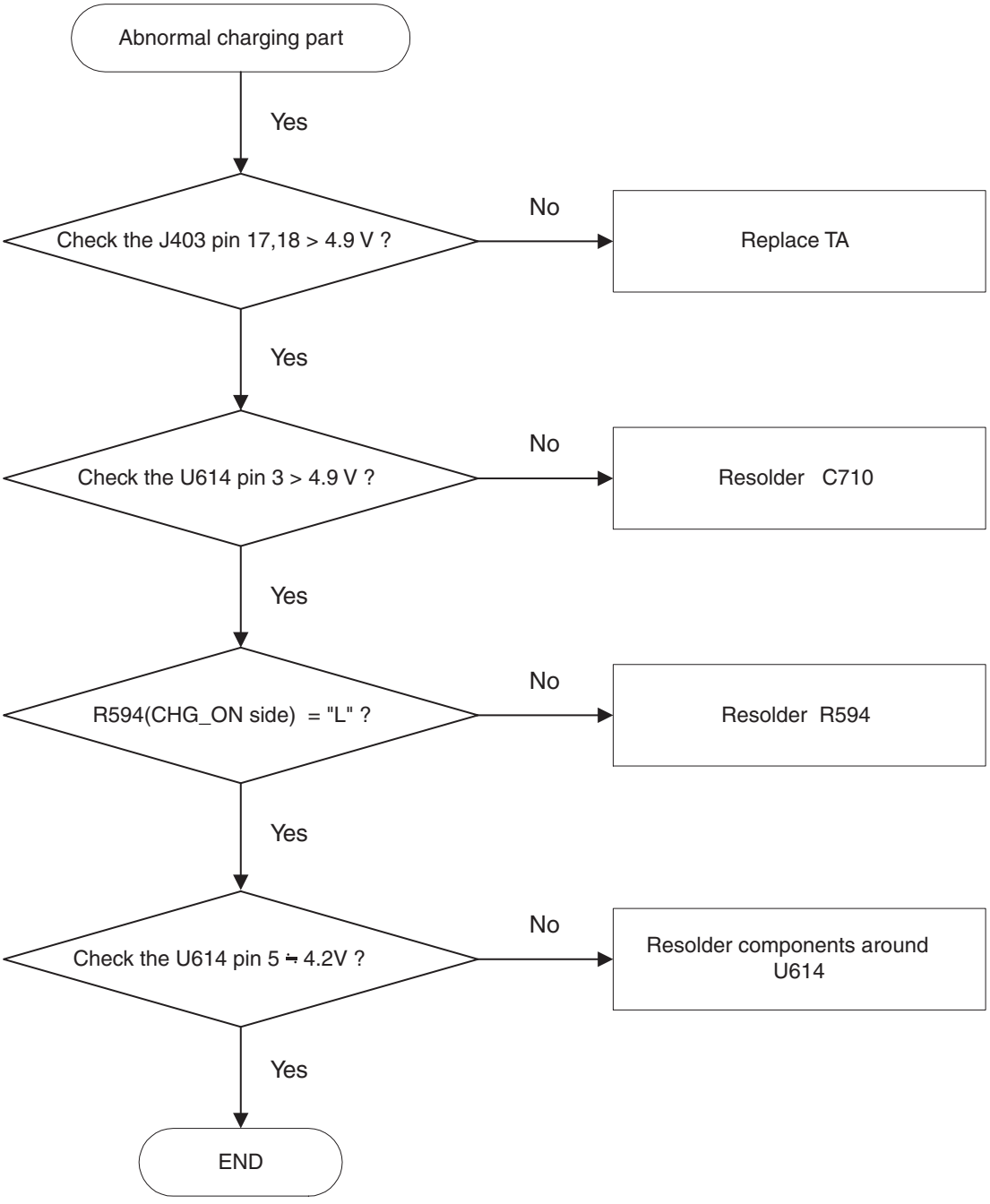


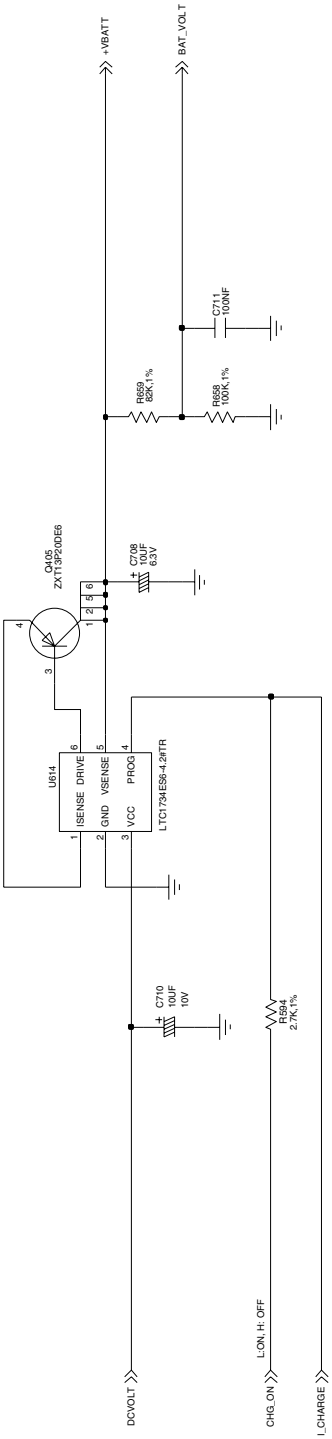

RTC_3V_3
RTC_VCC
C751 100N F
R738 1K
BAT-1 RBA14
D441 MCL4154
C307 10N F
C306 10UF/6.3V
U470 LP2981 AIM5X-3.0
C305 10PF
C427 100N F
+VBAT
LVCC
AVCC
VDD3.0
VOUT
C318 1U F
C319 10N F
U621 LP2981 AIM5X-3.3
C555 27P F
C389 10UF/6.3V
C388 10N F
U619 LP2981 AIMX-2.5
C535 10UF/6.3V
C536 10N F
U620 LP2981 AIMX-3.0
One Point Contact
C749 1U F
C750 10UF/6.3V
C496 100U F
C579 100U F
R694 1K
U474 S3846SD V
C587 10N F
R683 10K
POWE R
H403
H402
H401
H400
PCB RXING HOLES(1/9)


Initial Failure
Downloading SW is OK ?
(Is CSROM signal OK ?)
No
Yes
After power on,
check and repair the important
signals of U618 as follows
The node
between R661 and C712
= "H" (RST)
No
Check the circuit
related to reset
Yes
R348 = "H" (BOOT)
No
Resolder R348
Yes
R440 = "H" (MSIZE)
No
Resolder R440
Yes
R438 = "L" (EXTPROC)
No
Resolder R438
Replace PBA
Check all the other connection
by Test S/W
Check the circuit around LCD
Check the circuit
around U617(EEPROM)
and data stored in it
END

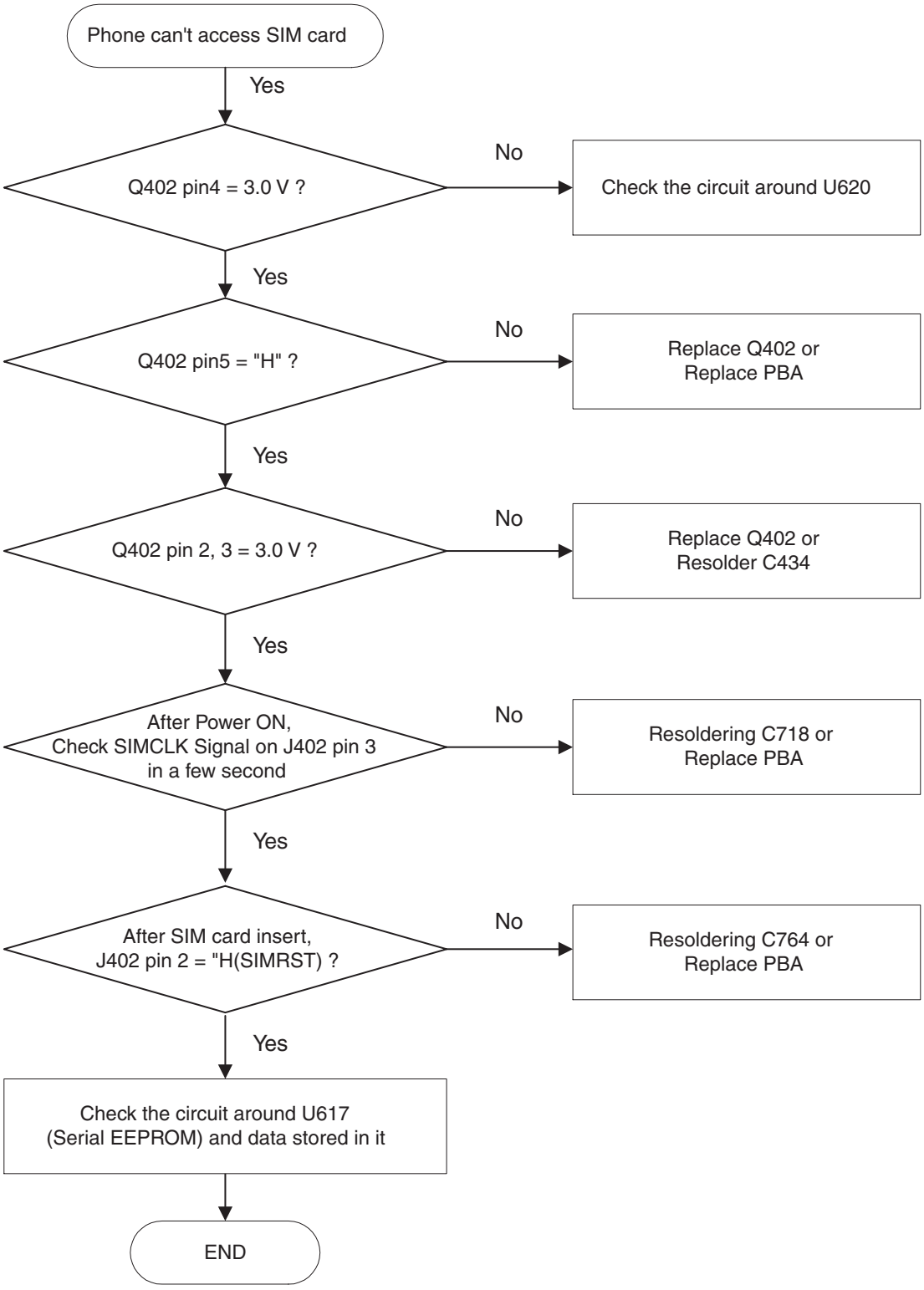

VCC
R655
U466
_WP/ACC
_CE
SIMLEVEL
VCC
R440
U467
CSROM
MSIZE
SYSRST
GPIO3
C712
R661
VCC
R348
U475
SIMPWDN_BOOT

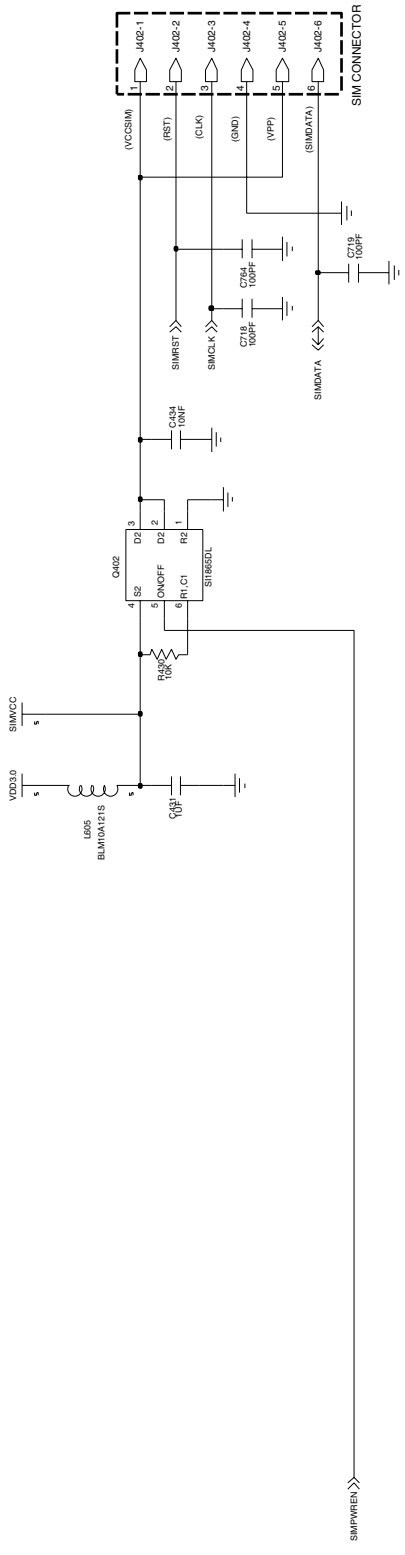
5-3 Charging Part



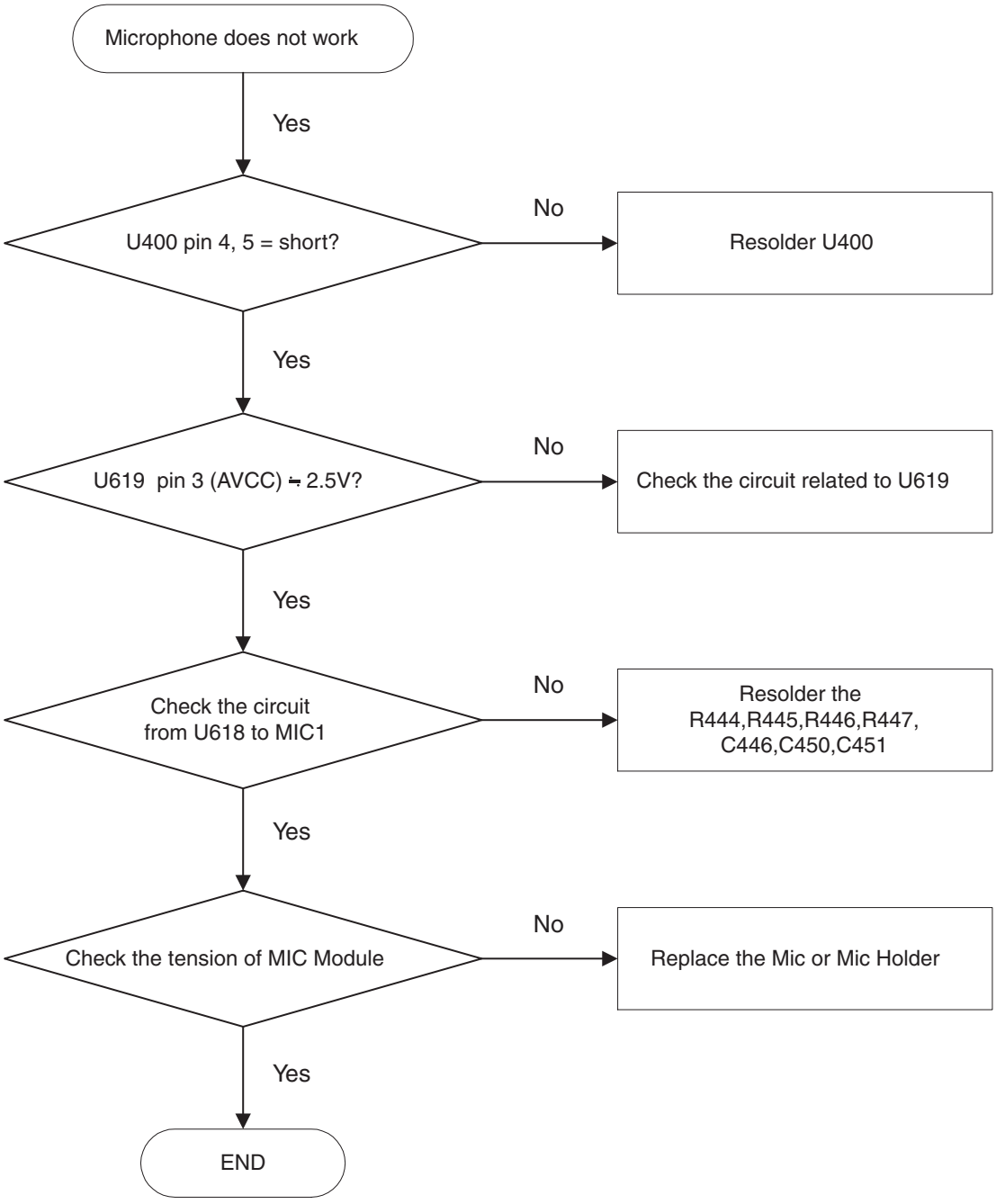

+VBATT
BAT_VOLT
C711
100NF
R659
620K,1%
R658
100K,1%
Q405
ZXT13P20DE6
C708
10UF
6.3V
U614
ISENSE
DRIVE
GND
VSENSE
VCC
PROG
LTC1734ES6-4.2#TR
C710
10UF
10V
R594
2.7K,1%
DCVOLT
CHG_ON
I_ON, H: OFF
I_CHARGE

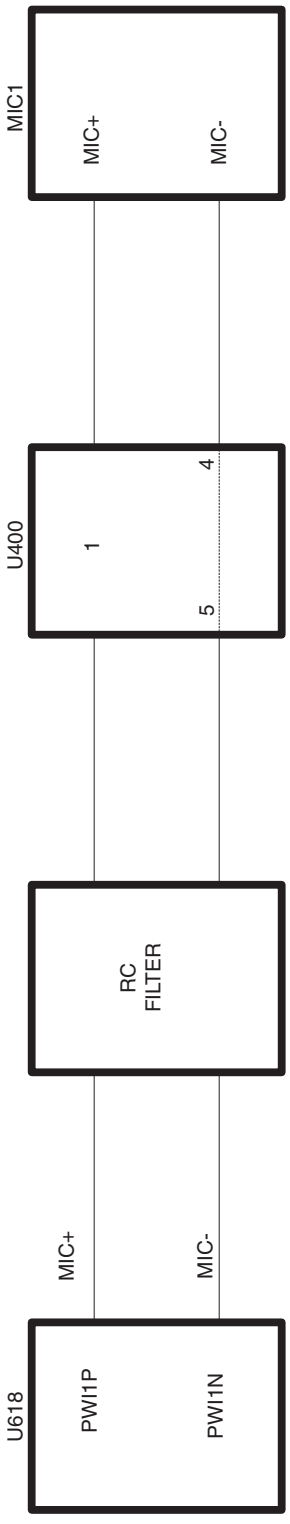
5-4 Sim Part


Phone can't access SIM card
Yes
Q402 pin4 = 3.0 V ?
No
Check the circuit around U620
Yes
Q402 pin5 = "H" ?
No
Replace Q402 or
Replace PBA
Yes
Q402 pin 2, 3 = 3.0 V ?
No
Replace Q402 or
Resolder C434
Yes
After Power ON,
Check SIMCLK Signal on J402 pin 3
in a few second
No
Resoldering C718 or
Replace PBA
Yes
After SIM card insert,
J402 pin 2 = "H(SIMRST) ?
No
Resoldering C764 or
Replace PBA
Yes
Check the circuit around U617
(Serial EEPROM) and data stored in it
END

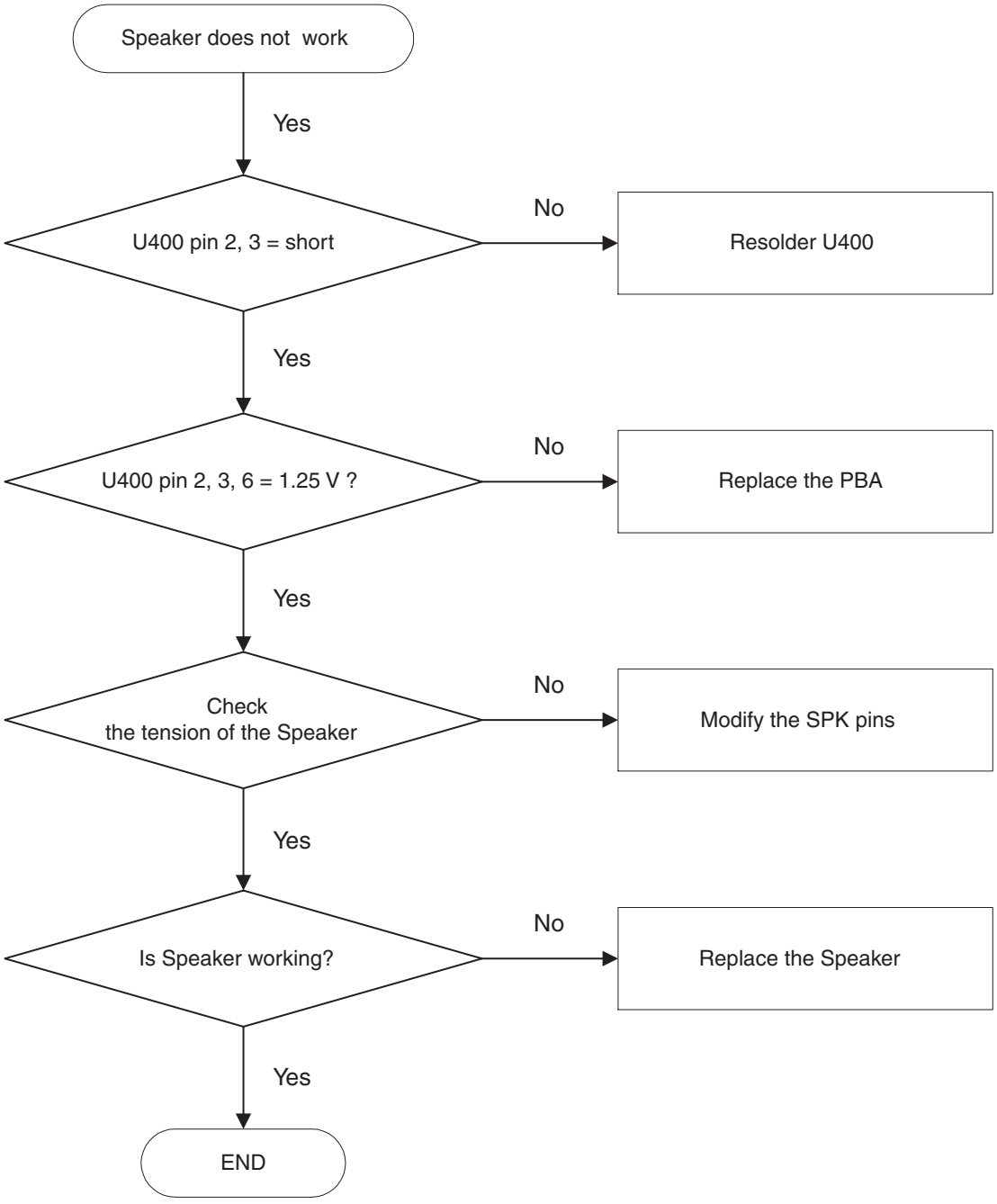

SIM CONNECTOR
J402-1
J402-2
J402-3
J402-4
J402-5
J402-6
(VCCSIM)
(RST)
(CLK)
(GND)
(VPP)
(SIMDATA)
C719 100PF
C704 100PF
C719 100PF
SIMRST
SIMCLK
SIMDATA
C434 10NF
Q402
SIT865DL
ON/OFF
R1, C1
R2
R436 10K
SIMVCC
VDD3.0
L605 BLM10A121S
C431 1UF
SIMPWREN

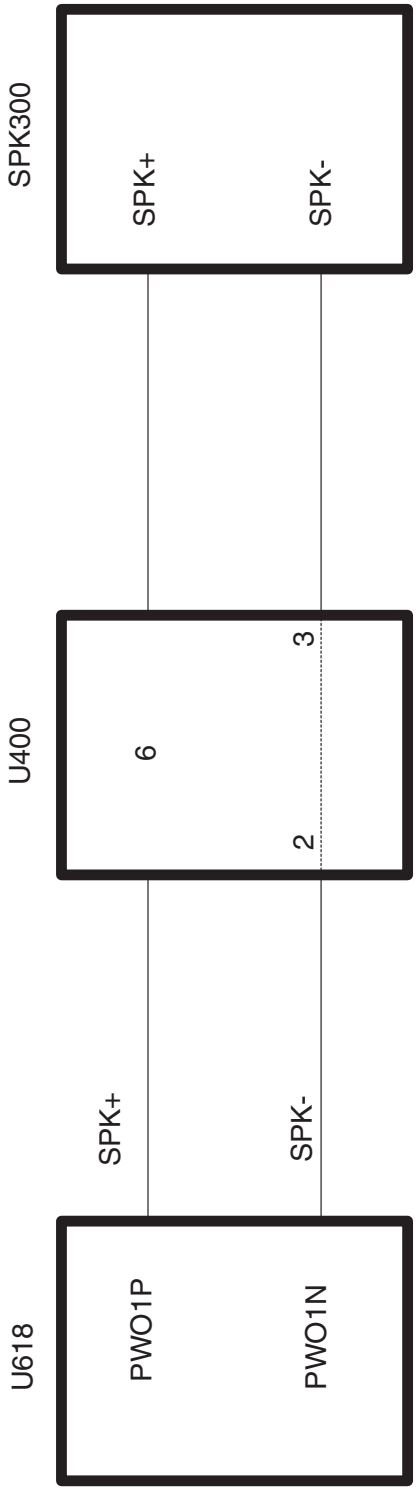
5-5 Microphone Part



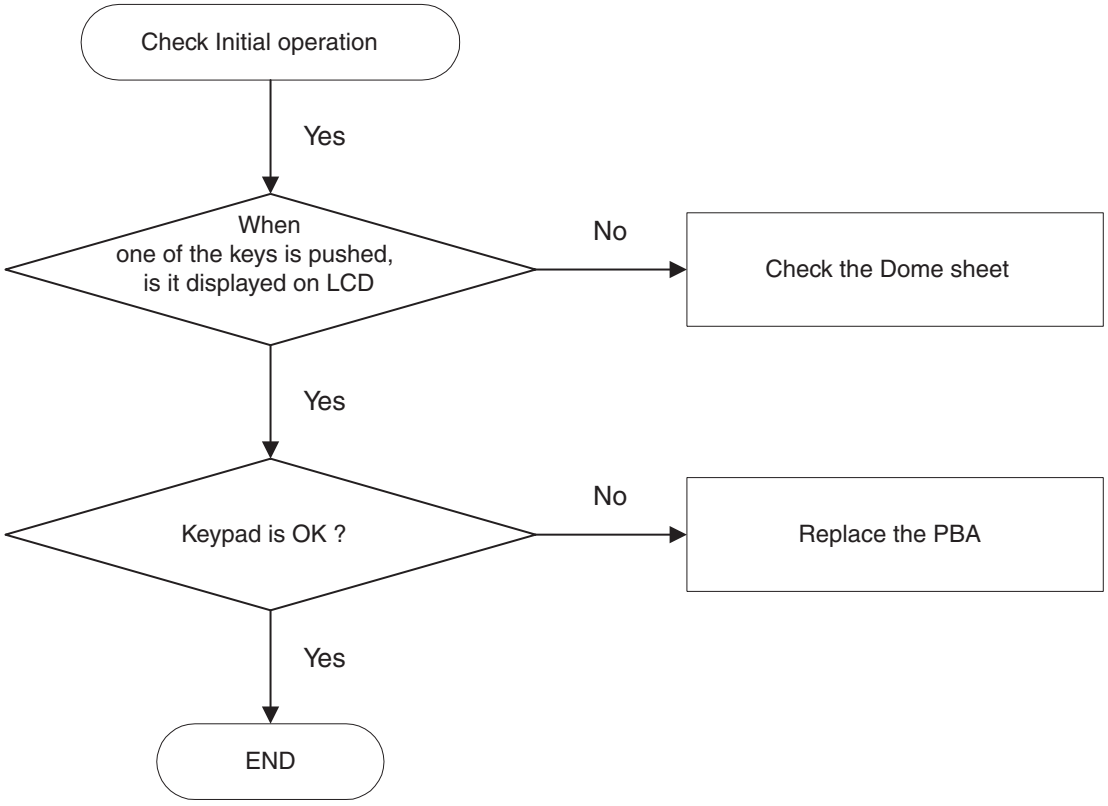

MIC1
MIC+
MIC-
U400
1
4
5
RC
FILTER
MIC+
MIC-
U618
PWI1P
PWI1N

5-6 Speaker Part

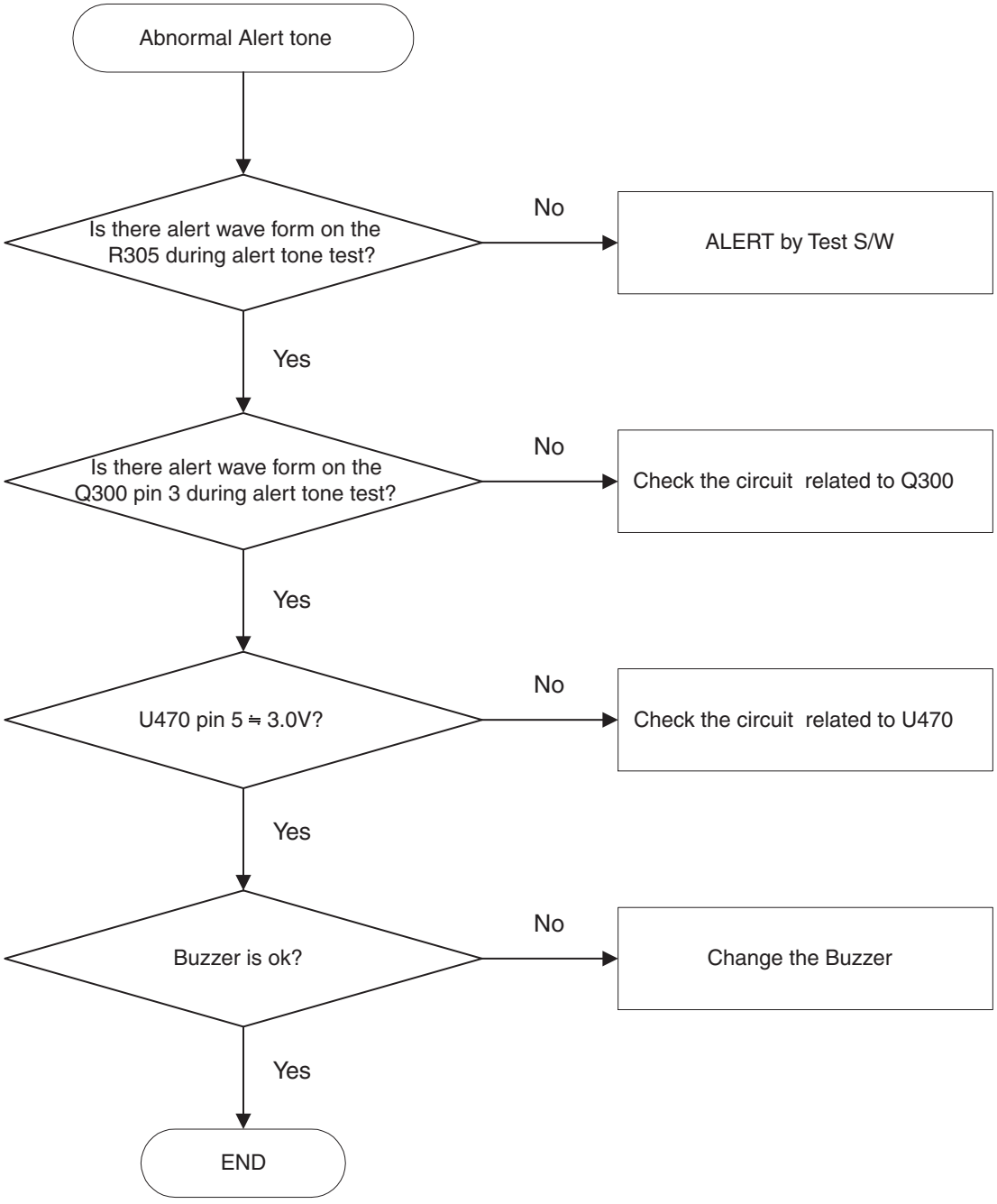


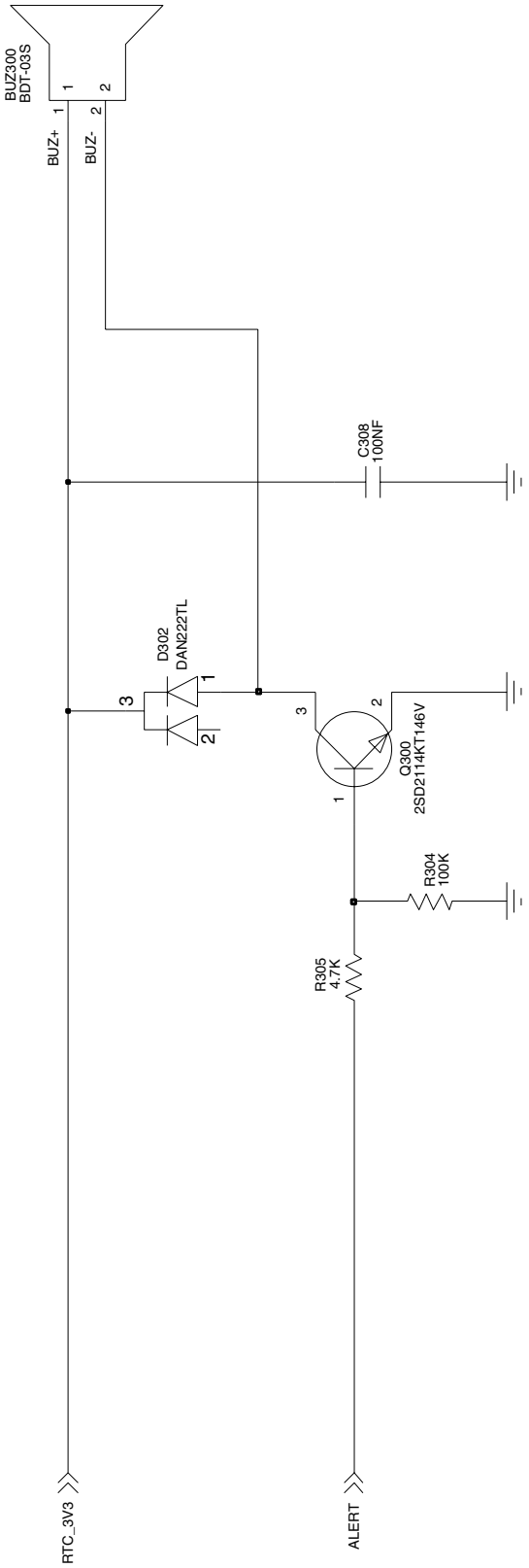

SPK300
SPK+
SPK-
U400
6
3
2
SPK+
SPK-
U618
PWO1P
PWO1N

5-7 Key Data Input

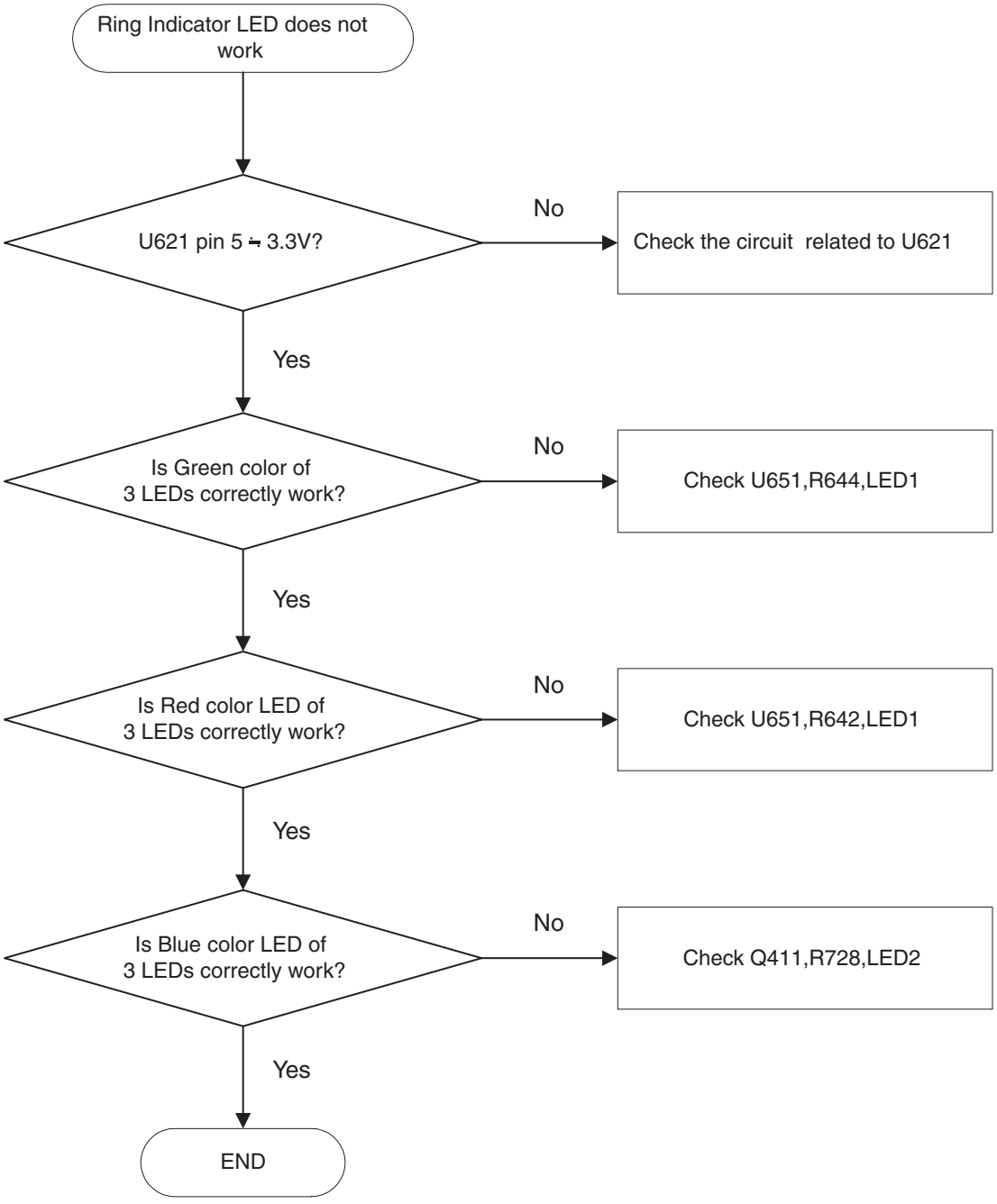


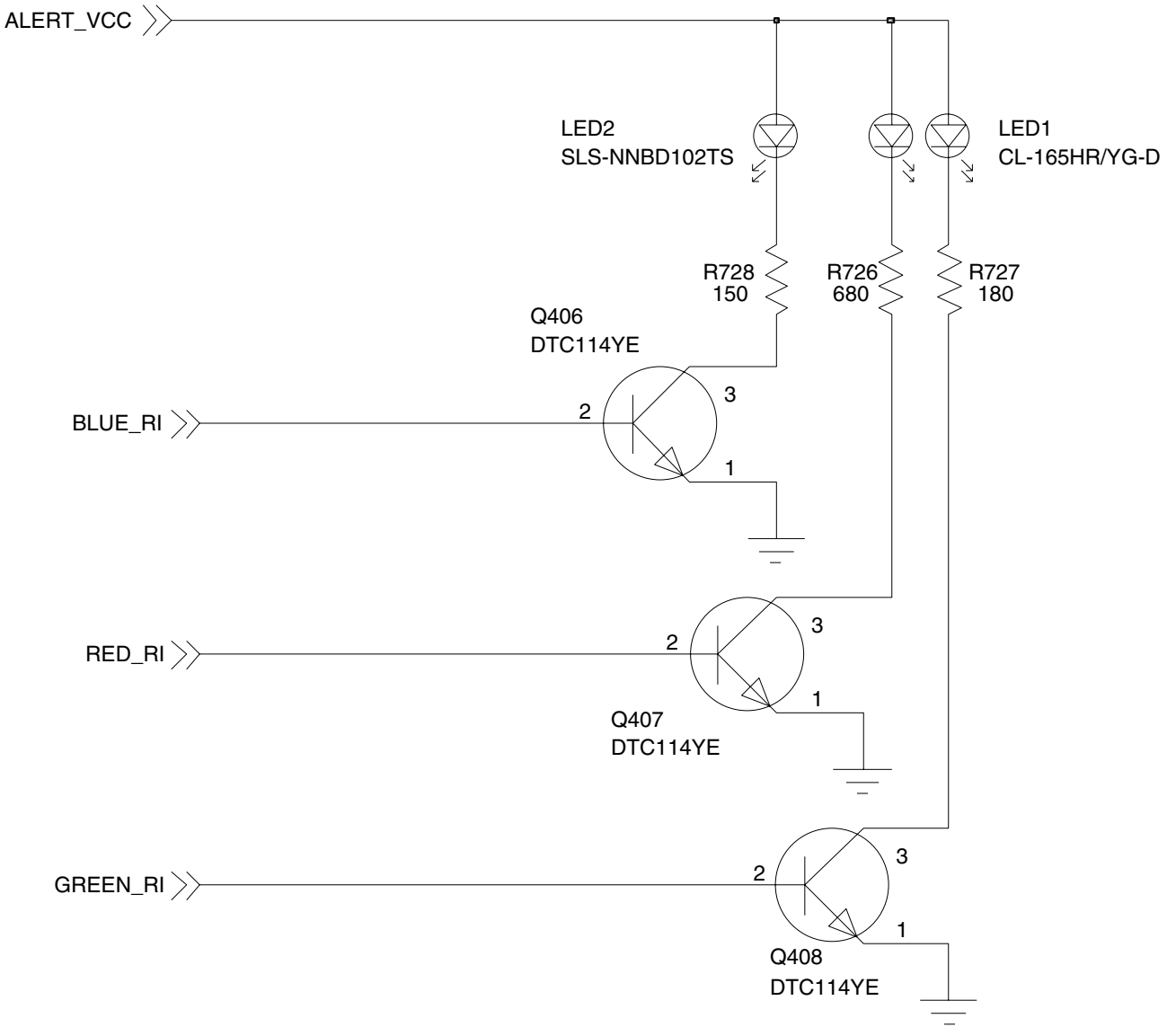
5-8 Alert Tone



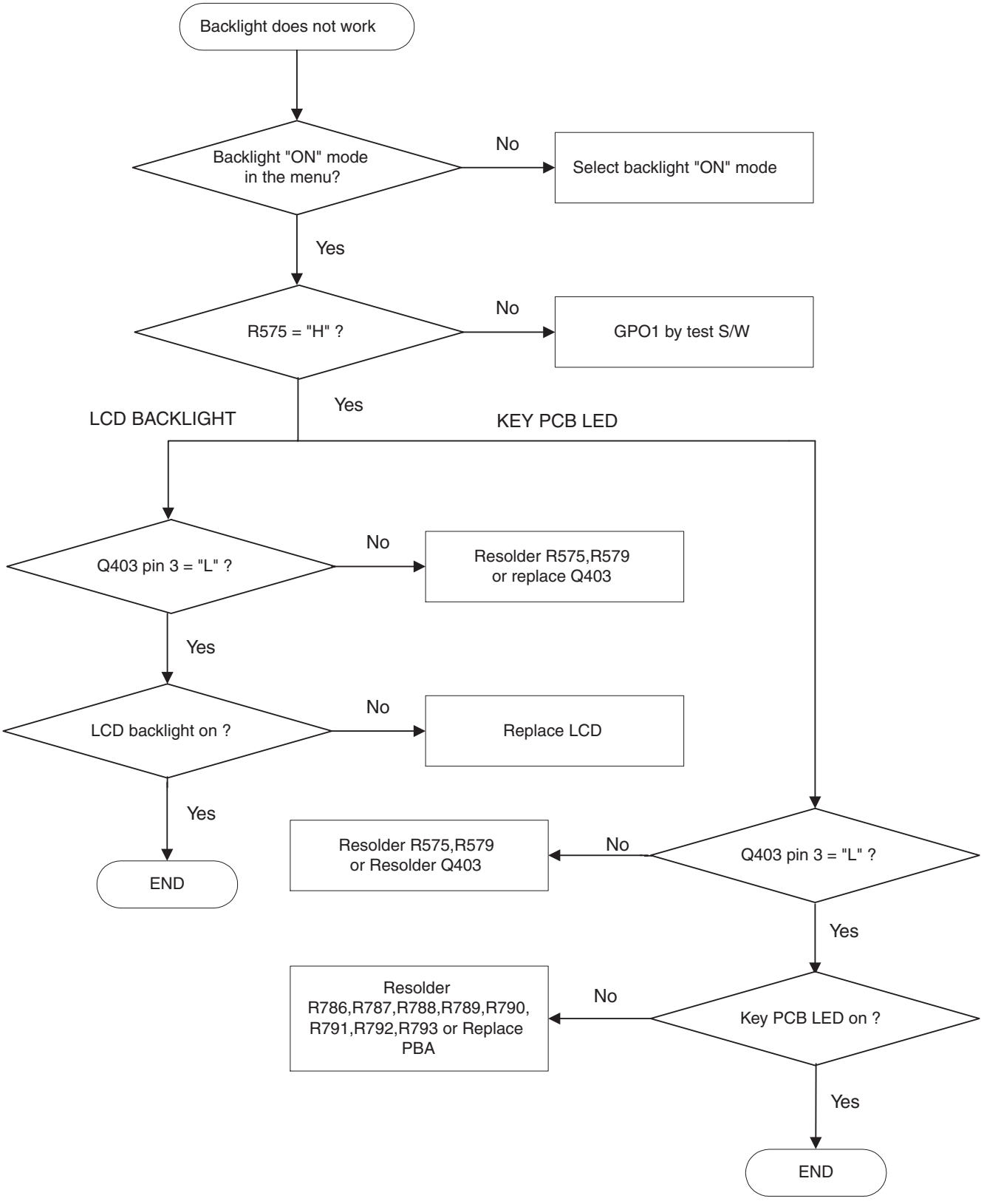

BUZ300
BDT-03S
1
2
BUZ+
BUZ-
C308
100NF
D302
DAN222TL
3
1
2
3
2
Q300
2SD2114KT146V
1
R304
100K
R305
4.7K
RTC_3V3
ALERT

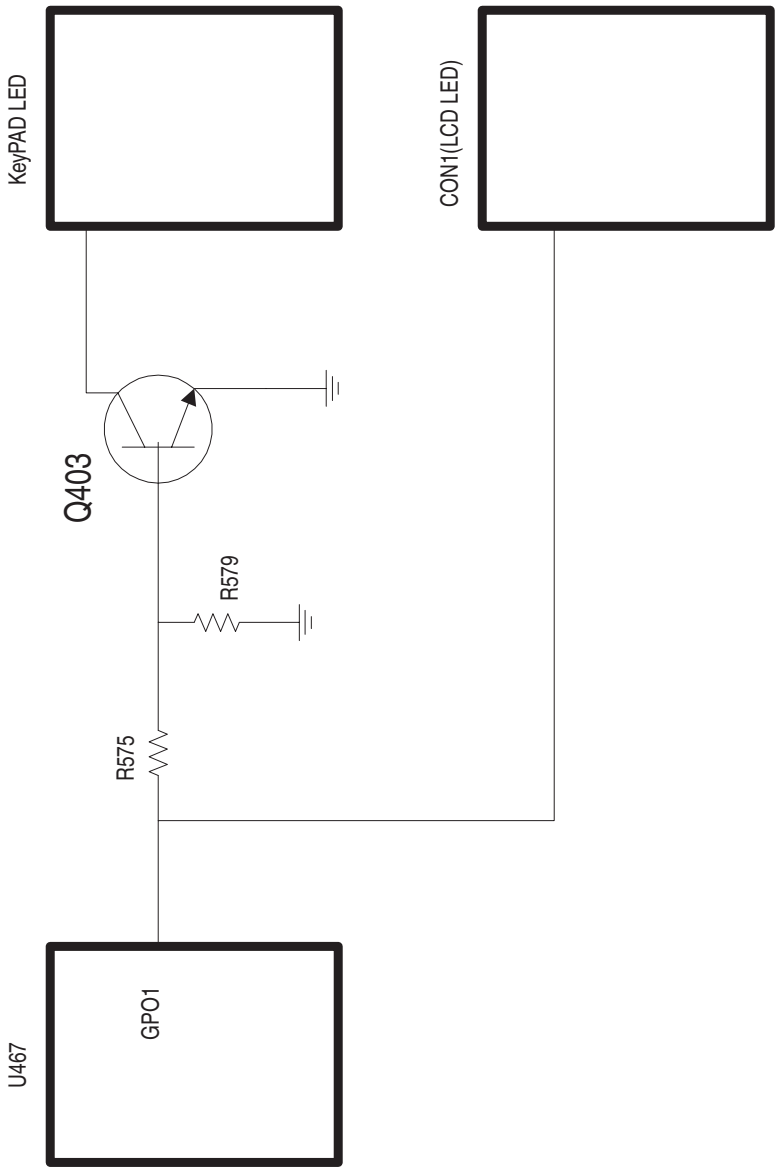
5-9 Ring Indicator

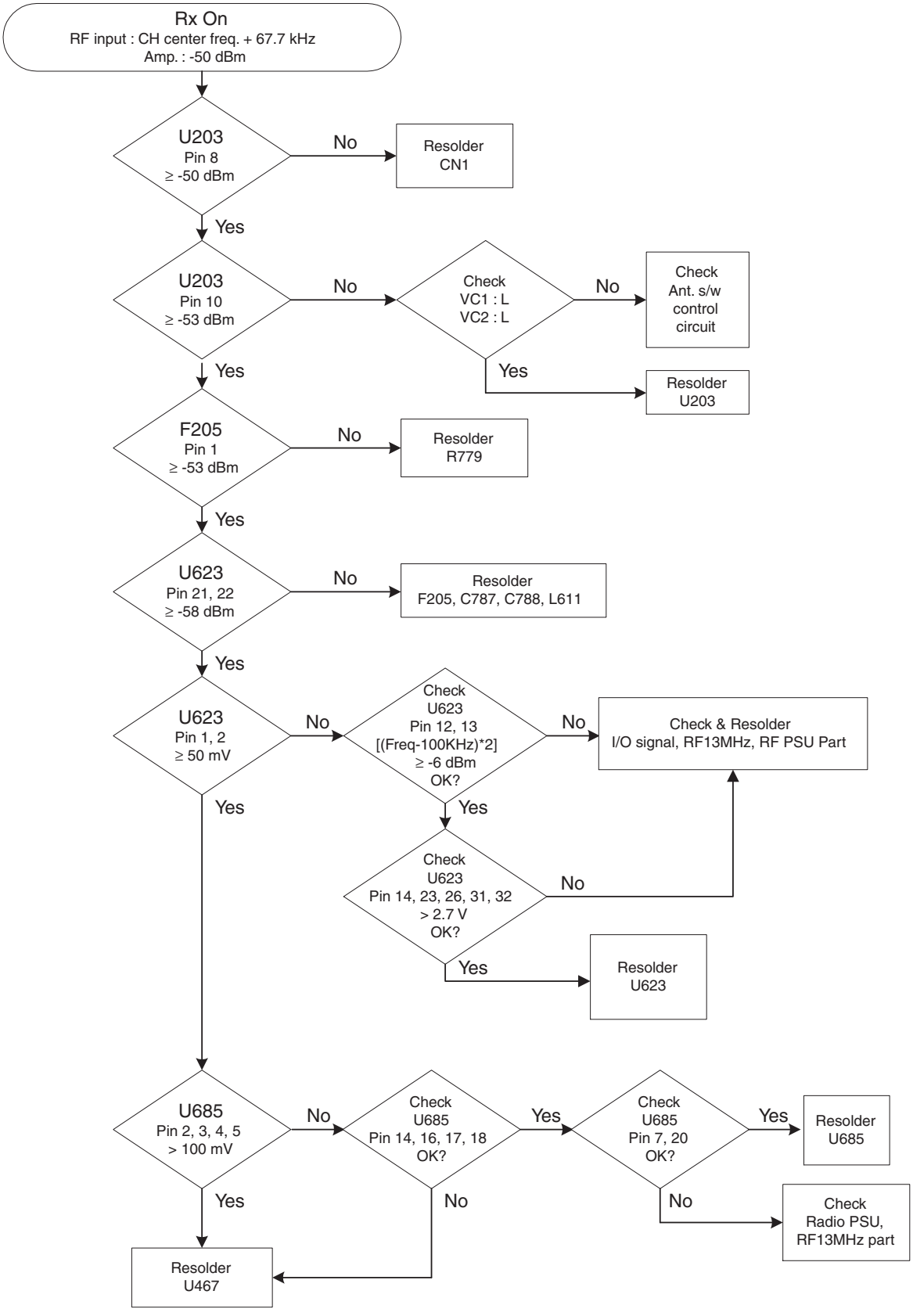


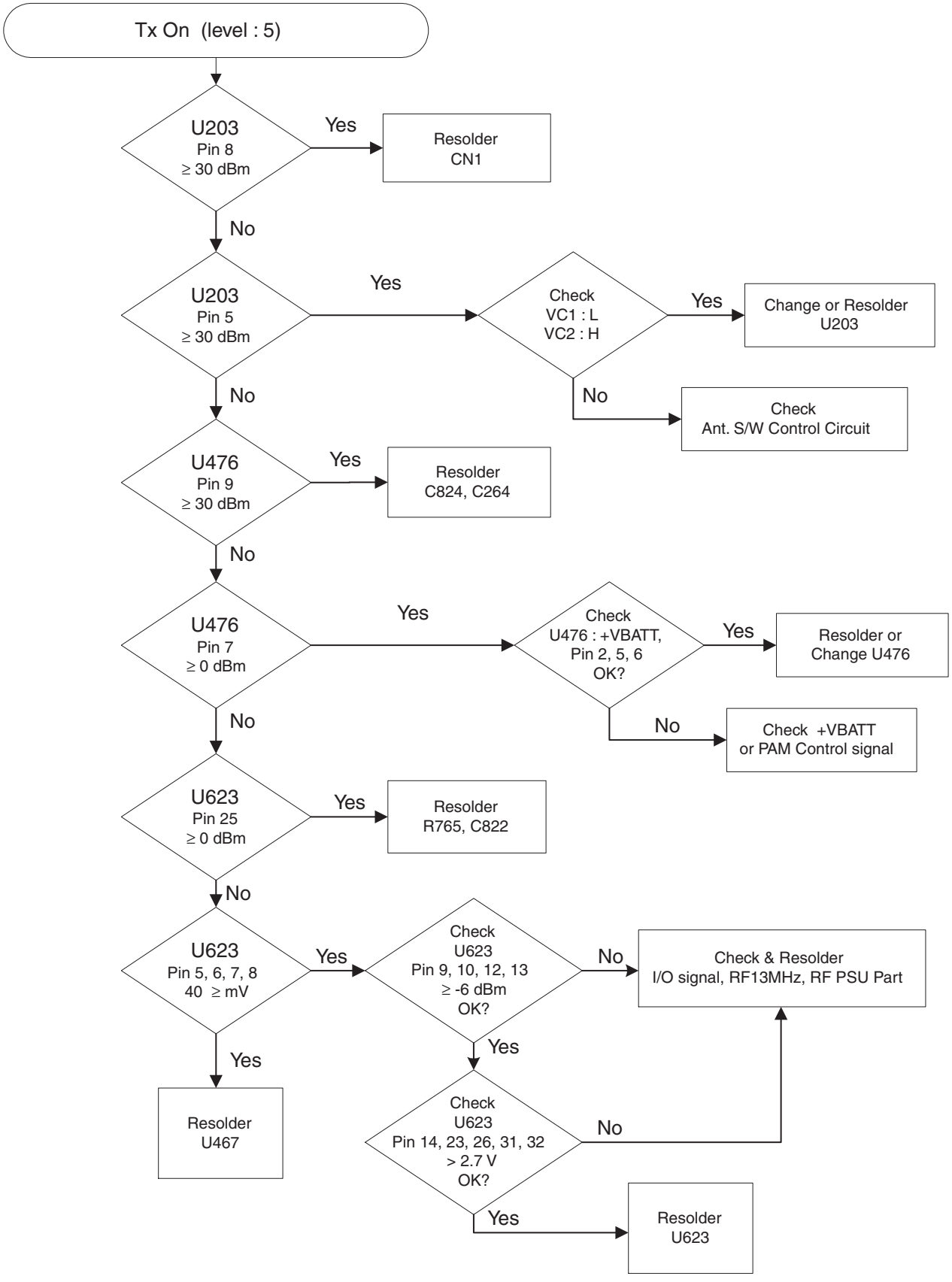

ALERT_VCC
LED2
SLS-NNBD102TS
LED1
CL-165HR/YG-D
R728
150
R726
680
R727
180
Q406
DTC114YE
BLUE_RI
2
3
1
RED_RI
2
3
1
Q407
DTC114YE
GREEN_RI
2
3
1
Q408
DTC114YE

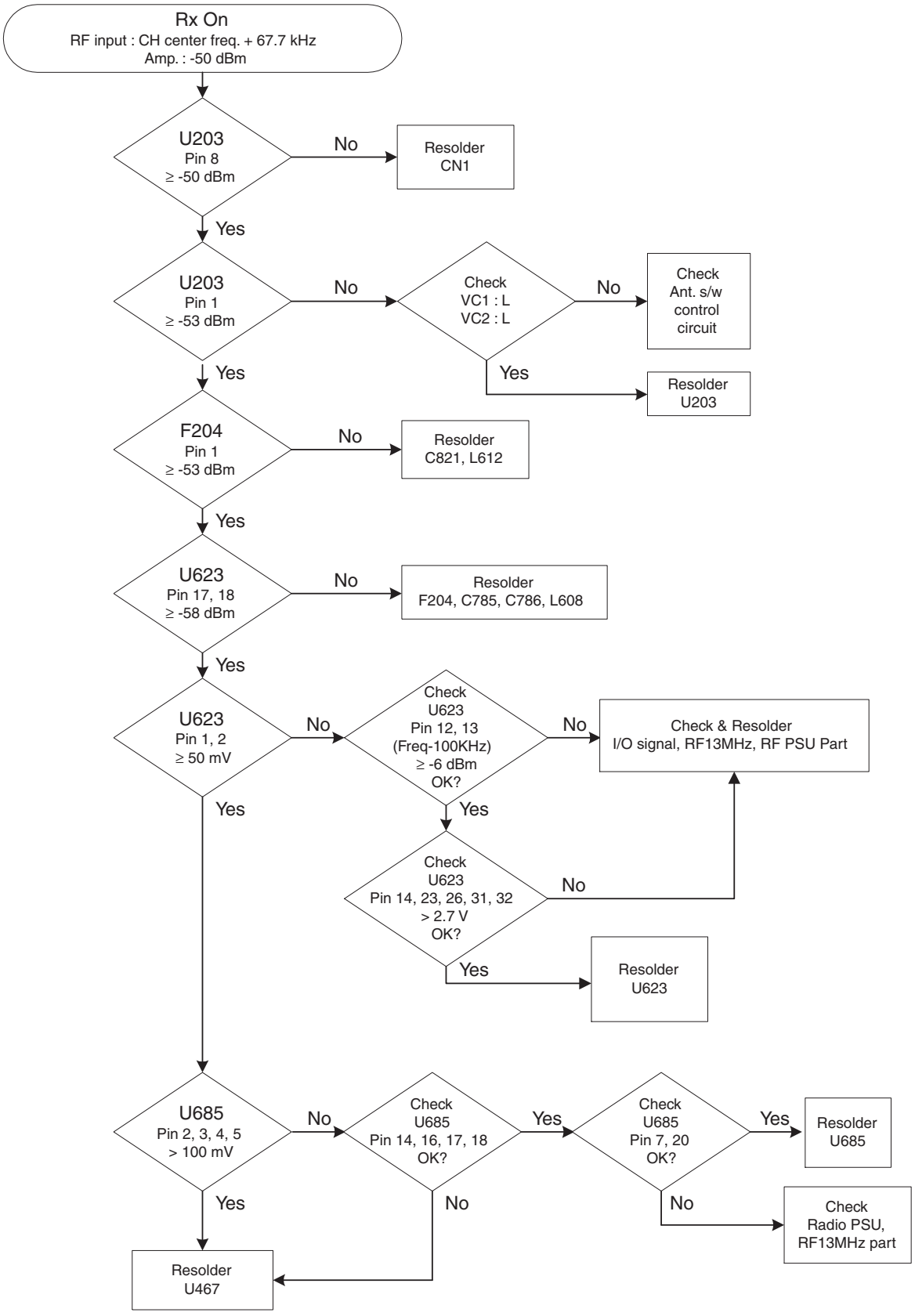
5-10 Back Light

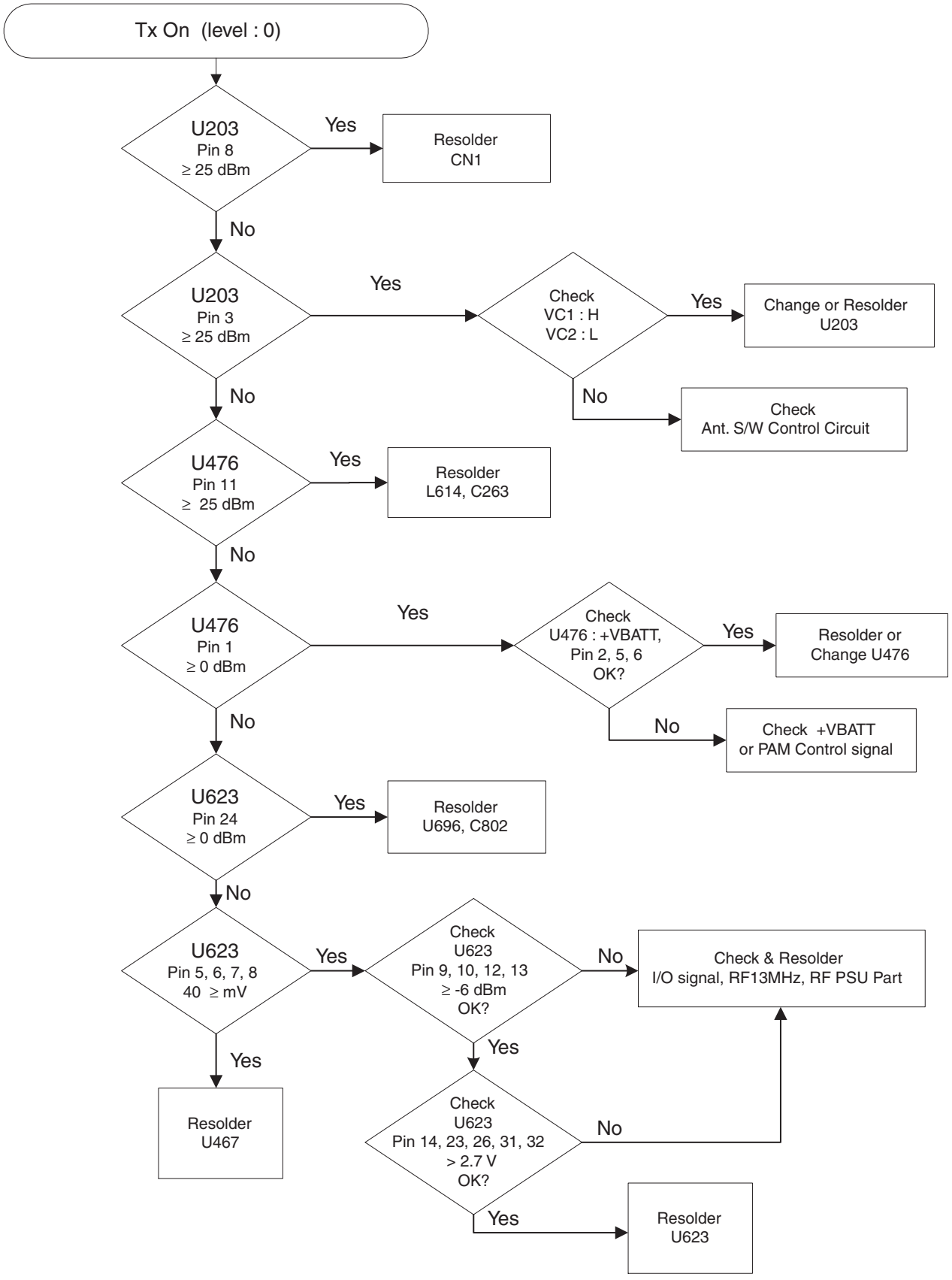


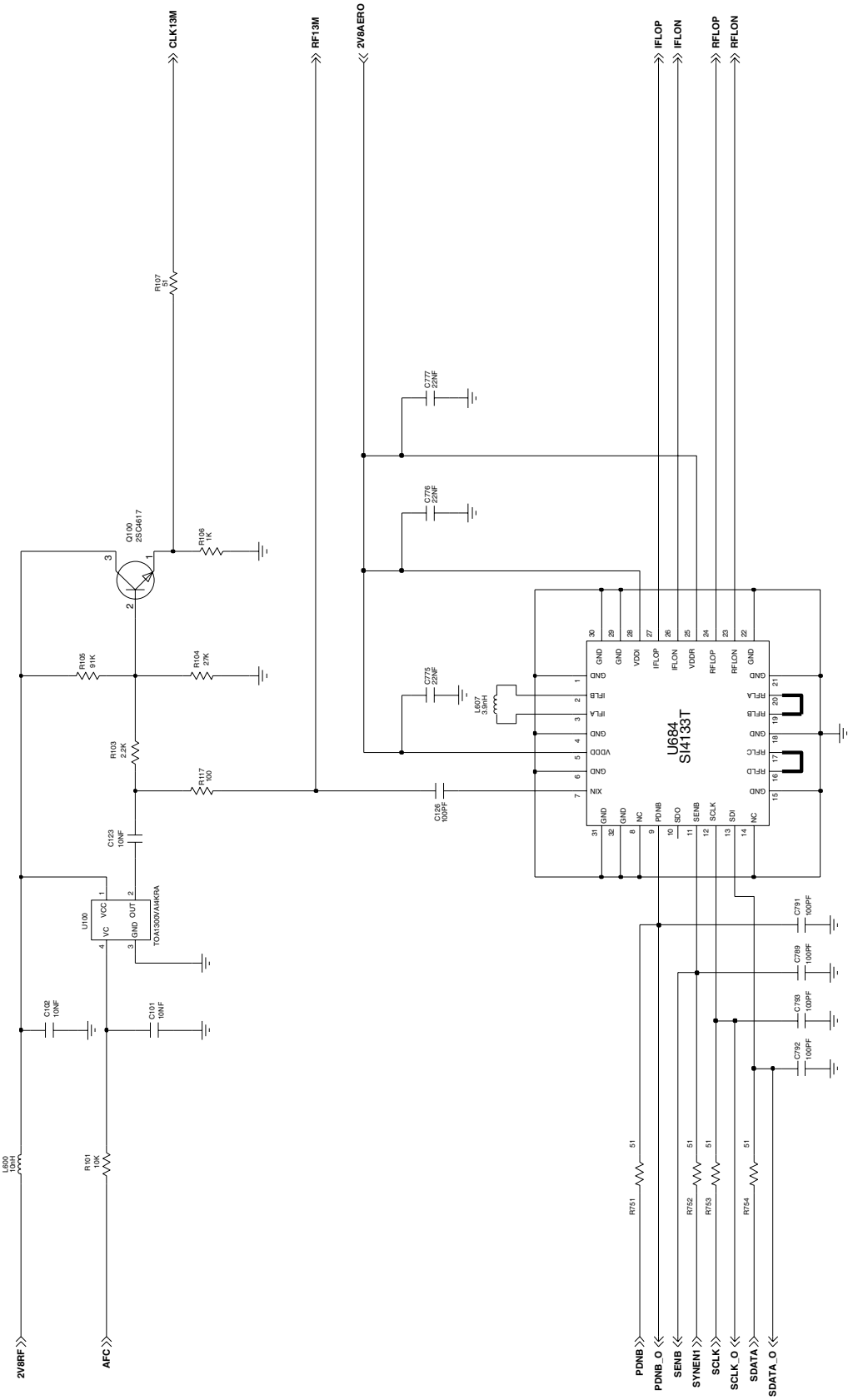

KeyPAD LED
CON1(LCD LED)
Q403
R579
R575
U467
GPO1

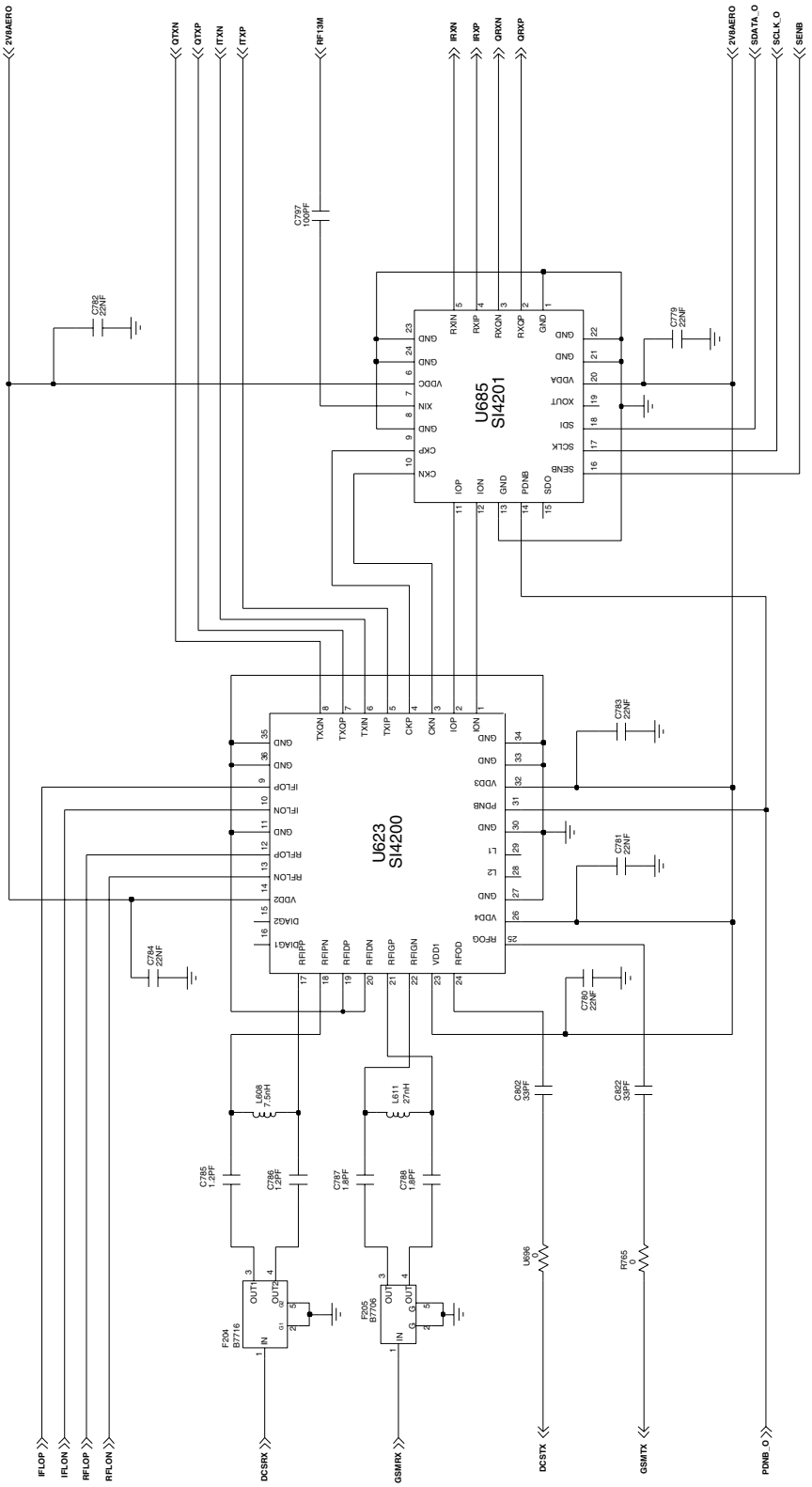

Rx On
RF input : CH center freq. + 67.7 kHz
Amp. : -50 dBm
U203
Pin 8
≥ -50 dBm
No
Resolder
CN1
Yes
U203
Pin 10
≥ -53 dBm
No
Check
VC1 : L
VC2 : L
No
Check
Ant. s/w
control
circuit
Yes
Yes
Resolder
U203
F205
Pin 1
≥ -53 dBm
No
Resolder
R779
Yes
U623
Pin 21, 22
≥ -58 dBm
No
Resolder
F205, C787, C788, L611
Yes
U623
Pin 1, 2
≥ 50 mV
No
Check
U623
Pin 12, 13
[(Freq-100KHz)*2]
≥ -6 dBm
OK?
No
Check & Resolder
I/O signal, RF13MHz, RF PSU Part
Yes
Yes
Check
U623
Pin 14, 23, 26, 31, 32
> 2.7 V
OK?
No
Yes
Resolder
U623
U685
Pin 2, 3, 4, 5
> 100 mV
No
Check
U685
Pin 14, 16, 17, 18
OK?
Yes
Check
U685
Pin 7, 20
OK?
Yes
Resolder
U685
Yes
No
No
Check
Radio PSU,
RF13MHz part
Resolder
U467

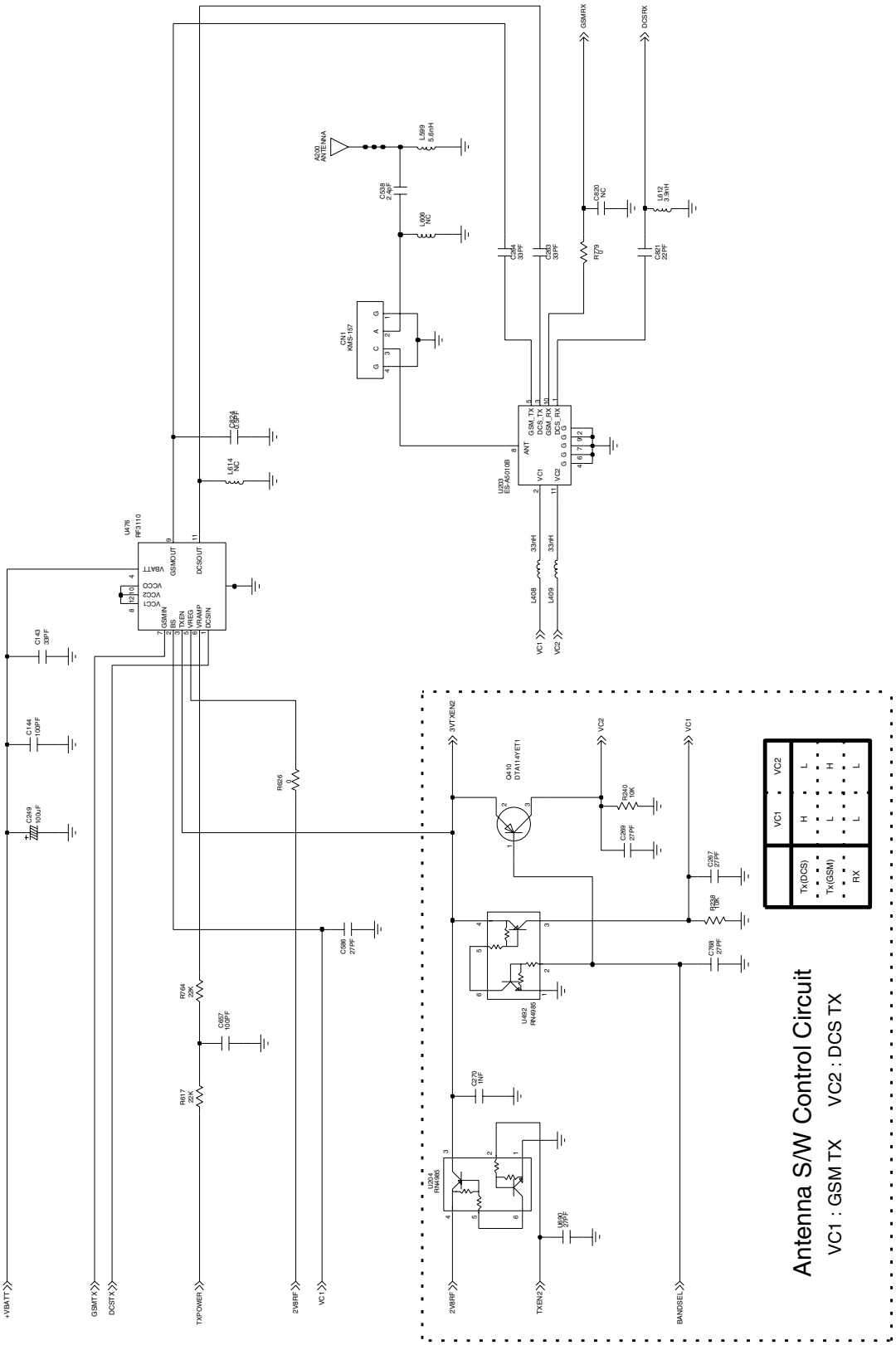

Tx On (level : 5)
U203
Pin 8
≥ 30 dBm
Yes
Resolder
CN1
No
U203
Pin 5
≥ 30 dBm
Yes
Check
VC1 : L
VC2 : H
Yes
Change or Resolder
U203
No
Check
Ant. S/W Control Circuit
No
U476
Pin 9
≥ 30 dBm
Yes
Resolder
C824, C264
No
U476
Pin 7
≥ 0 dBm
Yes
Check
U476 : +VBATT,
Pin 2, 5, 6
OK?
Yes
Resolder or
Change U476
No
Check +VBATT
or PAM Control signal
No
U623
Pin 25
≥ 0 dBm
Yes
Resolder
R765, C822
No
U623
Pin 5, 6, 7, 8
40 ≥ mV
Yes
Check
U623
Pin 9, 10, 12, 13
≥ -6 dBm
OK?
No
Check & Resolder
I/O signal, RF13MHz, RF PSU Part
Yes
Resolder
U467
Yes
Check
U623
Pin 14, 23, 26, 31, 32
> 2.7 V
OK?
No
Yes
Resolder
U623


Rx On
RF input : CH center freq. + 67.7 kHz
Amp. : -50 dBm
U203
Pin 8
≥ -50 dBm
No
Resolder
CN1
Yes
U203
Pin 1
≥ -53 dBm
No
Check
VC1 : L
VC2 : L
No
Check
Ant. s/w
control
circuit
Yes
Yes
Resolder
U203
F204
Pin 1
≥ -53 dBm
No
Resolder
C821, L612
Yes
U623
Pin 17, 18
≥ -58 dBm
No
Resolder
F204, C785, C786, L608
Yes
U623
Pin 1, 2
≥ 50 mV
No
Check
U623
Pin 12, 13
(Freq-100KHz)
≥ -6 dBm
OK?
No
Check & Resolder
I/O signal, RF13MHz, RF PSU Part
Yes
Yes
Check
U623
Pin 14, 23, 26, 31, 32
> 2.7 V
OK?
No
Yes
Resolder
U623
U685
Pin 2, 3, 4, 5
> 100 mV
No
Check
U685
Pin 14, 16, 17, 18
OK?
Yes
Check
U685
Pin 7, 20
OK?
Yes
Resolder
U685
Yes
No
No
Check
Radio PSU,
RF13MHz part
Resolder
U467


Tx On (level : 0)
U203
Pin 8
≥ 25 dBm
Yes
Resolder
CN1
No
U203
Pin 3
≥ 25 dBm
Yes
Check
VC1 : H
VC2 : L
Yes
Change or Resolder
U203
No
Check
Ant. S/W Control Circuit
No
U476
Pin 11
≥ 25 dBm
Yes
Resolder
L614, C263
No
U476
Pin 1
≥ 0 dBm
Yes
Check
U476 : +VBATT,
Pin 2, 5, 6
OK?
Yes
Resolder or
Change U476
No
Check +VBATT
or PAM Control signal
No
U623
Pin 24
≥ 0 dBm
Yes
Resolder
U696, C802
No
U623
Pin 5, 6, 7, 8
40 ≥ mV
Yes
Check
U623
Pin 9, 10, 12, 13
≥ -6 dBm
OK?
No
Check & Resolder
I/O signal, RF13MHz, RF PSU Part
Yes
Yes
Resolder
U467
Check
U623
Pin 14, 23, 26, 31, 32
> 2.7 V
OK?
No
Yes
Resolder
U623


CLK13M
RF13M
2V8AERO
IFLOP
IFLON
RFLOP
RFLON
R107
0
Q100
2SC4617
R106
11K
R105
91K
R104
27K
R103
2.2K
R117
100
C123
10NF
C102
10NF
C101
10NF
U100
TOA1302VA4KRA
L600
10NH
R101
10K
2V8RF
AFC
C777
22NF
C776
22NF
C775
22NF
L607
3.9nH
C126
100PF
U684
SI4133T
GND
VDDI
IFLOP
IFLON
VDDR
RFLOP
RFLON
IFLA
IFLB
VDDD
XIN
RFLA
RFLB
RFLC
RFLD
NC
PDNB
SDO
SENB
SCLK
SDI
C791
100PF
C789
100PF
C788
100PF
C792
100PF
R751
R752
R753
R754
51
PDNB
PDNB_O
SENB
SYNEN1
SCLK
SCLK_O
SDATA
SDATA_O


2V8AERO
QTXN
QTXP
ITXN
ITXP
RF13M
IRXN
IRXP
QRXN
QRXP
2V8AERO
SDATA_O
SCLK_O
SENB
C797 100PF
C782 22NF
U685 SI4201
GND RXIN RXIP RXQN RXQP GND
GND GND VDDA XOUT SDI SCLK SENB SDO
GND VDDC XIN GND CKP CKN IOP ION GND PDNB
C779 22NF
U623 SI4200
TXQN TXQP TXIN TXIP CKP CKN IOP ION
GND GND IFLOP IFLON GND RFLOP RFLON VDD2 DIAG2 DIAG1
GND GND VDD3 PDNB GND L1 L2 GND VDD4 RFOG
RFIPP RFIPN RFIDP RFIDN RFIGP RFIGN VDD1 RFOD
C783 22NF
C781 22NF
C784 22NF
C780 22NF
L608 7.5nH
L611 27nH
C785 1.2PF
C786 1.2PF
C787 1.8PF
C788 1.8PF
C802 33PF
C802 33PF
U696 0
R765 0
F204 B7716
F205 B7706
IN OUT1 OUT2
IN OUT1 OUT2
IFLOP
IFLON
RFLOP
RFLON
DCSRX
GSMRX
DCSTX
GSMTX
PDNB_O


Antenna S/W Control Circuit
VC1 : GSM TX VC2 : DCS TX
VC1 VC2
Tx(DCS) H L
Tx(GSM) L H
RX L L
+VBATT
GSMTX
DCSTX
TXPOWER
2VBRF
VC1
3VTXEN2
BANDSEL
TXEN2
GSMRX
DCSRX
ANTENNA
U476
RF3110
U203
ESP-A50108
Q410
DTA114YET1
U492
RN4905
U204
RN4905